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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10.077.416

02/15/2002

William D. Abraham

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3484

26645

7590

02/06/2003

THE LUBRIZOL CORPORATION
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EXAMINER

MCAVOY, ELLEN M

ART UNIT

PAPER NUMBER

1764

DATE MAILED: 02/06/2003

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/077,416

Applicant(s)

ABRAHAM ET AL.

Examiner

Ellen M McAvoy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nalesnik et al (6,103,674) in combination with Davis (4,584,115), Horodysky (4,692,257) or Baranski et al (5,698,499).

Nalesnik et al ["Nalesnik"] disclose a lubricating oil additive which imparts friction modification and beneficial antiwear, extreme pressure, and oxidation stability properties to an oil of lubricating viscosity which comprises the reaction product of: (a) an unsaturated or saturated ester or acid and (b) an aliphatic diamine, which is further reacted with (c) carbon disulfide, and then (d) a molybdenum compound to form the final complex product. See column 4, lines 30-52. The additives are useful in a variety of lubricating oil basestocks such as natural and synthetic oils where they are present in amounts ranging from 0.05 to 30 weight percent. See column 13, lines 31-56. The examiner is of the position that the oil compositions containing the molybdenum complex of Nalesnik meet the limitations of components (A) and (B) of the claims. Applicants' invention differs by further adding a boron-containing compound (C) and, optionally, a phosphorus containing compound (D) to the composition. However, Nalesnik allows for the addition of conventional lubricant additives to the composition in column 8, lines 29-41, and includes compounds such as organo borate antiwear agents and various phosphorus

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compounds. See column 10, lines 53 et seq. Zinc dihydrocarbyl dithiophosphates are specifically set forth in column 12, lines 32-43, and clearly meets the limitation of optional component (D) of applicants' claims. Davis, Horodysky and Baranski et al ["Baranski"] are added to show specific organo borate compounds as additives to lubricating oil compositions which meet the limitations of the various (C) components of applicants claims.

Davis teaches lubricating oil compositions comprising the reaction products of boric acid or boron trioxide with an epoxide having at least 8 carbon atoms as anti-wear, friction modifying and rust inhibiting additives. See column 1, line 64 to column 2, line 17. The examiner is of the position that the compound of Davis clearly meets the limitation of component (C) when it comprises component (C-II), at least one borated epoxide, as set forth in the specification on page 23. Horodysky discloses multifunctional additives for lubricant compositions made by reacting a hydrocarbyl vicinal diol with boric acid or trialkyl borate. The borated products have the structures set forth in column 5, lines 5-20, and may be added to lubricant compositions in an amount of from 0.1% to about 10% by weight. The examiner is of the position that the borated products of Horodysky meet the limitation of component (C) of the claims when it comprises a borated ester of formula (C-I-2a) as set forth in dependent claim 15. Baranski discloses phenolic borates having the formula set forth in the abstract as antiwear and friction modifying additives to lubricating oil compositions. The additive clearly meets the limitation of compound (C) of the claims when it comprises component (C-I-1a) as set forth in dependent claim 14. Thus, the examiner is of the position that all of the components of applicants claims are known as lubricating oil additives. Having the prior art references before the inventors at the

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time the invention was made it would have been obvious to the skilled artisan to have combined the organo borate antiwear additives of Davis, Horodysky and/or Baranski to the lubricant compositions of Nalesnik if their known imparted properties were so desired. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation relied on by the examiner is the teaching in column 10, lines 53-55 of Nalesnik, allowing for the addition of organo borate antiwear additives to the composition.

Claim Rejections - 35 USC § 103

Claims 1-20 are also rejected under 35 U.S.C. 103(a) as being unpatentable over deVries et al (4,265,773) or (4,285,822) in combination with Davis (4,584,115), Horodysky (4,692,257) or Baranski et al (5,698,499).

The deVries et al references ["deVries"] disclose lubricating oil additives prepared from reacting an acidic molybdenum compound, an oil-soluble basic nitrogen containing compound and carbon disulfide. The additives are effective for inhibiting oxidation, imparting antiwear and extreme pressure properties, and for modifying the friction properties of a variety of lubricating oils. See column 1, line 66 to column 2, line 22, and column 5, lines 47-54 of 773. Suitable basic nitrogen-containing compounds include succinimides, carboxylic acid amides, hydrocarbyl

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monoamines and polyamines. See column 2, lines 40-55 of '773. The examiner is of the position that lubricating oil compositions comprising the compounds of deVries meet the limitation of components (A) and (B) of the claims. deVries also allows for the addition of conventional lubricant additives to the compositions in column 6, lines 5-13, and, as set forth above, Davis, Horodysky and Baranski are added to show specific organo borate compounds as additives to lubricating oil compositions which meet the limitations of the various (C) components of applicants' claims.

Davis teaches lubricating oil compositions comprising the reaction products of boric acid or boron trioxide with an epoxide having at least 8 carbon atoms as anti-wear, friction modifying and rust inhibiting additives. See column 1, line 64 to column 2, line 17. The examiner is of the position that the compound of Davis clearly meets the limitation of component (C) when it comprises component (C-II), at least one borated epoxide, as set forth in the specification on page 23. Horodysky discloses multifunctional additives for lubricant compositions made by reacting a hydrocarbyl vicinal diol with boric acid or trialkyl borate. The borated products have the structures set forth in column 5, lines 5-20, and may be added to lubricant compositions in an amount of from 0.1% to about 10% by weight. The examiner is of the position that the borated products of Horodysky meet the limitation of component (C) of the claims when it comprises a borated ester of formula (C-I-2a) as set forth in dependent claim 15. Baranski discloses phenolic borates having the formula set forth in the abstract as antiwear and friction modifying additives to lubricating oil compositions. The additive clearly meets the limitation of compound (C) of the claims when it comprises component (C-I-1a) as set forth in dependent

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claim 14. Thus, the examiner is of the position that all of the components of applicants' claims are known as lubricating oil additives. Having the prior art references before the inventors at the time the invention was made it would have been obvious to the skilled artisan to have combined the organo borate antiwear additives of Davis, Horodysky and/or Baranski to the lubricant compositions of deVries if their known imparted properties were so desired. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation relied on by the examiner is the teaching in column 6, lines 5-13 of deVries '773 allowing for the addition of conventional additives to the composition.

Conclusion

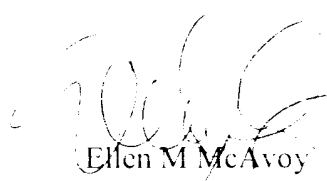
The prior art made of record and not relied upon is considered pertinent to applicants' disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ellen M McAvoy whose telephone number is (703) 308-2510. The examiner can normally be reached on M-F (7:30-5:00) with alt. Fridays off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (703) 308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Ellen M. McAvoy
Primary Examiner
Art Unit 1764

EMcAvoy
February 3, 2003